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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cheng-Xian Han

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SUPREME PATENT SERVICES  
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EXAMINER

GUHARAY, KARABI

ART UNIT

PAPER NUMBER

2879

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/040,560	<b>Applicant(s)</b> HAN ET AL.	
	<b>Examiner</b> Karabi Guharay	<b>Art Unit</b> 2879	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>01/02</u> . | 6) <input type="checkbox"/> Other: _____                                    |

### ***Claim Objections***

Claims 16 & 17 are objected to because applicant claimed that organic EL film being deposited using organic-emitting diodes of small molecule. Diodes include electrodes and the EL layer. How can an EL layer be formed of light emitting diodes? Moreover, how a diode can be formed of small molecule. It is understood that applicant meant by light emitting material (instead of diode) of small molecule type in case of claim 16 and light emitting material of high molecule type in case of claim 17.

Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5-6 & 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Sundahl (US 6573660).

Regarding claims 1 & 9, Sundahl discloses a dual-panel (See Fig 2) active-matrix organic electroluminescent display (Fig 5) comprising an organic EL display panel (15, lines 49-59 of column 2) and an active matrix panel (20) and a conducting and adhesive material between two panels for adhering and bonding two panels together (lines 4-27 of column 2).

Regarding claim 5, Sundahl discloses that the conductive and adhesive material is chosen from the group of an anisotropic conductive film, an anisotropic conductive adhesive, a conducting resin, an AG epoxy, and a metal bump (lines 23-26 of column 2).

Regarding claim 6, though Sundahl does not explicitly mention the value of resistance of the conductive adhesive material in the range between 0.1 and  $10^6$  ohms, it is inherent, since Sundahl uses same anisotropic conducting film for the conductive adhesive material, as claimed by applicant.

Claims 1-15, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (US 2002/0079494).

Regarding claim 1 Kim et al. disclose a dual panel active organic electroluminescent display (Fig 18, Fig 26) comprising an organic electroluminescent panel (900, 600) an active matrix panel (500), and a conductive and adhesive material (480, 680) between two panels (see paragraph 0013 & 0014).

Regarding claim 2, Kim et al. discloses that the active matrix panel is a thin film transistor panel (see Paragraph 0013).

Regarding claim 3, Kim et al. disclose that the active matrix panel is a polycrystalline-silicon or an amorphous-silicon thin film transistor panel (paragraph 0034).

Regarding claim 4, Kim et al. disclose that each single pixel on the thin film transistor panel has at least one scan bus line, one at least data bus line, an active

matrix layout portion, and a contact region for adhering to and conducting with the organic EL display panel (Fig 19 and see paragraph 0032 & 0014).

Regarding claim 5, Kim et al. disclose that the conductive and adhesive material is chosen from the group of an anisotropic conductive film (film 680 of Fig 26), an anisotropic conductive adhesive, a conductive resin, an Ag epoxy, and a metal bump (see paragraph 0055).

Regarding claim 6, though Kim et al. do not explicitly mention the value of resistance of the conductive adhesive material in the range between 0.1 and  $10^6$  ohms, it is inherent, since Kim et al. use same anisotropic conducting film for the conductive adhesive material, as claimed by applicant.

Regarding claims 7&15, Kim et al. disclose a dual panel active matrix organic EL display comprising a transparent substrate (610 of Fig 26) having top and bottom surfaces a layer of transparent material (ITO, IZO, Paragraph 0051) a patterned organic EL film (630) deposited on the layer of transparent material, a cathode (660) deposited on the patterned organic EL film (630) and a passivation layer (protection film 670) for protecting EL film wherein an opening is formed on the top of cathode layer as a contact window to the active matrix panel ( paragraph 0052-0054, Fig 27).

Regarding claim 8, Kim et al. disclose that the organic EL film (630) is an organic light layer (paragraph 0052).

Regarding claim 9, Kim et al. disclose a method of manufacturing a dual panel active matrix organic electroluminescent display comprising fabrication of OLED panel, fabricating an active matrix panel and disposing a conducting and adhesive material

between the OLED and the matrix panel and adhering and bonding two panels together (paragraph 0048).

Regarding claim 10, Kim et al. disclose that the conductive adhesive is deposited on the active matrix panel to bond two panels together pixel to pixel (Fig 18, Paragraph 48).

Regarding claims 11, 12 & 14, Kim et al. disclose the method comprises a UV curable anisotropic conductive adhesive and step of adding heat and pressure and exposing a surface of active matrix panel to a UV light (Paragraph 0057, Fig 27).

Regarding claim 13, Kim et al. disclose the method of manufacturing a dual panel active matrix organic EL where a metal bump of low melting point is used and the step of adhering and bonding comprises applying hot air on a surface of OLED panel and active matrix panel (see Fig 32, paragraph 0068).

Regarding claim 18, Kim et al. disclose that the conducting and adhesive material (680) is deposited over the passivation layer (670) on the organic EL display panel to bond two panels together with pixel-to-pixel alignment (see Fig 26).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of

Art Unit: 2879

each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 16 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. as applied to claim 1 above, and further in view of Yamazaki et al. (US 6445005).

Regarding claims 16 & 17, Kim et al. disclose that the organic EL film is deposited by a shadow mask method (paragraph 0052), does not explicitly disclose whether the organic materials are small molecule or high molecule. However, Yamazaki et al. teach that the coating or printing method is suitable for forming an organic EL layer with high molecule organic materials while vapor deposition using shadow mask is suitable for low molecule organic materials (see lines 42-47 of column 2, and lines 37-48).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use ink jet printing method for forming high molecule organic material while using shadow mask method for small molecule organic material for their respective suitability.

#### ***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure :


Kim et al. (US 2002/0084454): Teaches that ink jet printing forms high molecule organic material layer, while small molecule organic material layers are formed by shadow mask method.


**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Karabi Guharay  
Patent Examiner  
Art Unit 2879

  
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